

CLAIMS

What is claimed is:

1. A system comprising:
a controller module comprising instructions for controlling a first
5 component; and
a second component with a security system that interacts with the
controller module to implement a security protocol before a second component can
control the first component based on executing the instructions in the controller
module.
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2. The system as set forth in claim 1 wherein a portion of the
instructions in the controller module comprises authentication instructions which
when executed by the second component cause the second component to send
authentication information to the first component to perform a portion of the
15 security protocol.
3. The system as set forth in claim 2 wherein the authentication
information is associated with an operator of the second component, the first
component authenticates the operator using the authentication information to
perform another portion of the security protocol.
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4. The system as set forth in claim 2 wherein the first component
authenticates the second component using the authentication information to
perform another portion of the security protocol, wherein upon unsuccessful
25 authentication the first component rejects messages from the second component
and upon successful authentication the first component accepts the messages from
the second component, the messages being associated with controlling the first
component.
- 30 5. The system as set forth in claim 2 wherein the first component
authenticates each of a plurality of messages received from the second component,
the messages being associated with controlling the first component, wherein upon

unsuccessful authentication of at least one of the messages the first component rejects the at least one message and upon successful authentication of another at least one of the messages the first component accepts the other at least one message from the second component.

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6. The system as set forth in claim 1 wherein the security system decrypts an encrypted controller module to perform a portion of the security protocol, the second component controls the first component based upon the execution of the instructions in the controller module.

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7. The system as set forth in claim 6 wherein the security system uses a cryptographic key associated with one of the first component, the second component and a third component to decrypt the encrypted controller module.

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8. The system as set forth in claim 1 wherein the security system authenticates the controller module using at least one of a digital certificate, a public key and a shared secret to perform a portion of the security protocol.

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9. The system as set forth in claim 1 wherein the security system rejects the controller module upon determining that a cryptographic signature associated with the controller module is not associated with a trusted component to perform a portion of the security protocol.

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10. The system as set forth in claim 1 wherein the controller module is encrypted using a cryptographic key from one of the first component, the second component and a third component.

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11. The system as set forth in claim 1 wherein the controller module comprises a cryptographic signature associated with at least one of the first component and one or more third components.

12. A method comprising:
providing a controller module comprising instructions for
controlling a first component; and
interacting with the controller module to implement a security
5 protocol before a second component can control the first component based on
executing the instructions in the controller module.

13. The method as set forth in claim 12 wherein the interacting with the
controller module to implement the security protocol further comprises:
10 executing a portion of the instructions in the controller module that
comprises authentication instructions;
sending authentication information from the second component to
the first component to perform a portion of the security protocol based on the
executed authentication instructions.

14. The method as set forth in claim 13 further comprising
authenticating an operator of the second component using the authentication
information to perform another portion of the security protocol.

15. The method as set forth in claim 13 further comprising:
authenticating the second component using the authentication
information to perform another portion of the security protocol; and
rejecting messages from the second component upon unsuccessful
authentication and accepting the messages from the second component upon
25 successful authentication, the messages associated with controlling the first
component.

16. The method as set forth in claim 13 further comprising:
authenticating each of a plurality of messages from the second
30 component, the messages associated with controlling the first component; and
rejecting at least one of the messages from the second component
upon unsuccessful authentication of the at least one message and accepting another

at least one of the messages upon successful authentication of the other at least one message.

5 17. The method as set forth in claim 12 wherein the interacting with the controller module to implement the security protocol further comprises:

 decrypting an encrypted controller module to perform a portion of the security protocol; and

 controlling the first component based upon the execution of the instructions in the controller module.

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 18. The method as set forth in claim 17 further comprising using a cryptographic key associated with one of the first component, the second component and a third component to decrypt the encrypted controller module.

15 19. The method as set forth in claim 12 further comprising authenticating the controller module using at least one of a digital certificate, a public key and a shared secret to perform a portion of the security protocol.

20 20. The method as set forth in claim 12 further comprising rejecting the controller module upon determining that a cryptographic signature associated with the controller module is not associated with a trusted component to perform a portion of the security protocol.

25 21. The method as set forth in claim 12 further comprising encrypting the controller module using a cryptographic key from one of the first component, the second component and a third component.

30 22. The method as set forth in claim 12 wherein the controller module comprises a cryptographic signature associated with at least one of the first component and one or more third components.

23. A computer-readable medium having stored thereon instructions, which when executed by at least one processor, causes the processor to perform:

providing a controller module comprising instructions for controlling a first component; and

5 interacting with the controller module to implement a security protocol before a second component can control the first component based on executing the instructions in the controller module.

24. The medium as set forth in claim 23 wherein the interacting with the controller module to implement the security protocol further comprises:

10 executing a portion of the instructions in the controller module that comprises authentication instructions;

15 sending authentication information from the second component to the first component to perform a portion of the security protocol based on the executed authentication instructions.

25. The medium as set forth in claim 24 further comprising authenticating an operator of the second component using the authentication information to perform another portion of the security protocol.

20 26. The medium as set forth in claim 24 further comprising:
authenticating the second component using the authentication information to perform another portion of the security protocol; and
25 rejecting messages from the second component upon unsuccessful authentication and accepting the messages from the second component upon successful authentication, the messages associated with controlling the first component.

30 27. The medium as set forth in claim 24 further comprising:
authenticating each of a plurality of messages from the second component, the messages associated with controlling the first component; and

rejecting at least one of the messages from the second component upon unsuccessful authentication of the at least one message and accepting another at least one of the messages upon successful authentication of the other at least one message.

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28. The medium as set forth in claim 23 wherein the interacting with the controller module to implement the security protocol further comprises:

decrypting an encrypted controller module to perform a portion of the security protocol; and

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controlling the first component based upon the execution of the instructions in the controller module.

29. The medium as set forth in claim 28 further comprising using a cryptographic key associated with one of the first component, the second component and a third component to decrypt the encrypted controller module.

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30. The medium as set forth in claim 23 further comprising authenticating the controller module using at least one of a digital certificate, a public key and a shared secret to perform a portion of the security protocol.

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31. The medium as set forth in claim 23 further comprising rejecting the controller module upon determining that a cryptographic signature associated with the controller module is not associated with a trusted component to perform a portion of the security protocol.

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32. The medium as set forth in claim 23 further comprising encrypting the controller module using a cryptographic key from one of the first component, the second component and a third component.

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33. The medium as set forth in claim 23 wherein the controller module comprises a cryptographic signature associated with at least one of the first component and one or more third components.